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Philip R. Warn Warn, Burgess & Hoffmann, P.C. P.O. Box 70098 Rochester Hills, MI 48307			EXAMINER SHINGLES, KRISTIE D	
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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/785,123
Filing Date: February 16, 2001
Appellant(s): SODERGREN, JASON

Philip R. Warn
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5/16/2007 appealing from the Office action mailed 7/17/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2005/0083965	SODERGREN	4-2005
5,530,842	ABRAHAM et al	6-1996
5,905,885	RICHTER et al	5-1999

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5,751,827	TAKAHASHI	5-1998
6,539,027	CAMBRON	3-2003
6,526,340	REUL et al	2-2003
6,236,917	LIEBL et al	5-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 4-9 and 12-16 are pending.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1, 4, 9 and 12-16 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-20 of copending Application No. US Publication 2005/0083965.

Claims 1, 4, 9 and 12-16 are directed to the same invention as that of claims 1-20 of commonly assigned US Publication 2005/0083965 as indicated in the table below. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Instant Application US Patent Application 09/785,123	US Publication 2005/0083965
Claim 1. A multi-protocol adapter for communicating with one or more remote computers over any one of a plurality of protocols, the adapter comprising: an integrated CPU having an embedded operating system, said operating system including software interface	Claims 1, 11, and 18. A protocol adapter for communicating with one or more remote computers over any one of a plurality of protocols, said adapter comprising: a motherboard including an integrated central processing unit (CPU), a plurality of interface

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modules and device drivers for one or more of interrogating, monitoring, retrieving data, downloading data, recording data, revising data and performing diagnostics over any one of the plurality of protocols, wherein the operating is capable of simultaneously communicating with the one or more computers running different protocols; and	modules, a plurality of device drivers and a plurality of daughter-board module slots, said CPU being capable of simultaneously communicating with the one or more computers operating different protocols; and
Claim 1(cont'd), a plurality of daughter board interface slots for accepting at least one daughter board interface modules for expanding the protocol of the multi-protocol adapter.	Claims 1, 11 and 18(cont'd), at least one daughter-board interface module mounted in one of the plurality of daughter-board slots, said at least one daughter-board module expanding the number of protocols of the adapter beyond those protocols being run by the CPU.
Claim 4. A multi-protocol adapter for communicating with one or more remote computers over any one of a plurality of protocols, the adapter comprising: an integrated CPU having an embedded operating system, said operating system including software interface modules and device drivers for one or more of interrogating, monitoring, retrieving data, downloading data, recording data, revising data and performing diagnostics over any one of the plurality of protocols, wherein the operating is capable of simultaneously communicating with the one or more computers running different protocols; the CPU having simultaneous interaction between at least one multiple device using multiple protocols; at least one daughter board having interconnect slots; an interface for interconnection of the at least one daughterboard; a serial port for diagnostics and system maintenance; a flash socket for storage of system software; a slot for connection of a peripheral; a socket for connection of RAM; an interface for connection of system RAM; an interface for connection of mass-storage devices; a battery for clock and configuration memory backup; an infrared serial interface; and a piezoelectric speaker.	Claims 8, 16 and 19. The protocol adapter according to claim 1 wherein the motherboard further includes components selected from a group consisting of an alphanumeric LCD and keypad, a 10-base T Ethernet interface, an EIA232 serial port, a compact flash storage, PCMCIA slots for connection of industry standard peripherals, a 72-pin SODIMM socket for connection of system RAM, an IDE interface for connection of mass-storage devices, a coin-cell battery for clock and configuration memory backup, an IRDA infrared serial interface, a piezoelectric speaker, level shifting buffers, an ATA interface for providing an attachment point for mass storage devices and a programmable logic block. Claim 7. The protocol adapter claim 1 wherein the motherboard further includes a flash-ROM for providing non-volatile memory space.
Claim 9. The multi-protocol adapter according to claim 1 further comprising: at least one of message scheduler, a message responder, a message filter or a script loader.	Claims 2 and 12. The protocol adapter according to claim 1 wherein the plurality of interface modules include a message scheduler module that includes a user-controllable multiplexed network message schedule. Claims 3 and 13. The protocol adapter according to claim 1 wherein the plurality of interface modules include a script loader module for allowing the controlled download, management and activation of user-defined scripts. Claims 4 and 14. The protocol adapter according to claim 1 wherein the plurality of interface modules includes a message filter module for filtering received multiplexed network messages. Claims 5 and 15. The protocol adapter according to

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	claim 1 wherein the plurality of interface modules include a message transponder module for providing user-definable message gatewaying functionality.
Claim 12. The multi-protocol adapter according to claim 1 further comprising: an on-board web server. Claim 13. The multi-protocol adapter according to claim 12 further comprising: communication between users of the adapter and the adapter via a web browser technology. Claim 14. The multi-protocol adapter according to claim 13 further comprising communication between users of the adapter and the adapter via a web browser via HTML.	Claim 6. The protocol adapter according to claim 1 further comprising an on-board web server for providing communication between the adapter and a web browser.
Claim 15. The multi-protocol adapter according to claim 1, as applied above, yet fail to explicitly teach wherein the plurality of protocols are selected from the group consisting of controller area network protocols, J1850 protocols, keyword protocol 2000, and UART-based protocols.	Claim 9. The protocol adapter according to claim 1 wherein the plurality of protocols are selected from the group consisting of controller area network protocols, J1850 protocols, key word protocol 2000, and UART-based protocols.
Claim 16. The multi-protocol adapter according to claim 1, wherein the daughter board interface modules are selected from the group consisting of SAI1850, UBP, CCD, SCI, CAN, SAEJ1587, J1939, J2284, J2411, ISO 11992, 9141-2 and KWP2000 modules.	Claims 10, 17 and 20. The protocol adapter according to claim 1 wherein the at least one daughter-board interface module is selected from the group consisting of SAI1850, UBP, CCD, SCI, CAN, SAEJ1587, J1939, J2284, J2411, ISO 11992, 9141-2 and KWP2000 modules.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Abraham et al* (US 5,530,842) in view of *Richter et al* (US 5,905,885) and *Takahashi* (US 5,751,827).

a. **Per claim 4**, *Abraham et al* teach a multi-protocol adapter for communicating with one or more remote computers over any one of a plurality of protocols, the adapter comprising:

- an integrated CPU having an embedded operating system, said operating system including software interface modules and device drivers for one or more of interrogating, monitoring, retrieving data, downloading data, recording data, revising data and performing diagnostics over any one of the plurality of protocols, wherein the operating is capable of simultaneously communicating with the one or more computers running different protocols (*col.3 lines 10-18, col.9 line 5-col.10 line 2; multiple channel concentrator includes modules for effectively communicating using different protocols concurrently*);
- the CPU having simultaneous interaction between at least one multiple device using multiple protocols (*Figure 2, col.3 lines 10-18, col.9 line 5-col.10 line 2*);
- a serial port for diagnostics and system maintenance (*col.11 lines 1-44*);
- a socket for connection of RAM (*col.21 lines 47-51*);
- an interface for connection of system RAM (*col.21 lines 47-51*);
- a battery for clock and configuration memory backup (*col.11 lines 1-60*).

Abraham et al fail to explicitly teach the adapter comprising the following ports.

However *Richter et al* disclose the inclusion of peripheral and expansion ports with the teaching of a system adapter and socket controller used for interfacing subsystems of different formats and protocols (*col.5 lines 15-21*); furthermore *Richter et al* teach the adapter and controller comprising: at least one daughter board having interconnect slots (*Abstract, col.4 line 66-col.5 line 52, col.18 lines 7-16*); an interface for interconnection of the at least one daughterboard (*Abstract, col.4 line 30-col.5 line 52*); a flash socket for storage of system software (*col.1 lines 25-59*); a slot for connection of a peripheral (*col.5 line 16-col.6 line 44*); an interface for connection of mass-storage devices (*col.1 lines 43-53, col.3 lines 18-25*); and an infrared serial interface (*col.5 lines 20-58*). *Abraham et al* and *Richter et al* fail to explicitly teach a piezoelectric speaker, however a piezoelectric speaker is common in the art as an additional

component on a printed circuit board as disclosed in *Takahashi* (col.2 lines 45-51, col.6 lines 28-33).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Abraham et al* and *Richter et al* with *Takahashi* in order to implement a multi-protocol adapter with additional ports/slots for expansion and peripheral devices and to furthermore include a piezo speaker useful for providing audio abilities while saving estate and space on the circuit board.

b. **Claim 1** contains limitations that are substantially equivalent to claim 4 and is therefore rejected under the same basis.

c. **Per claim 6**, *Abraham et al* and *Richter et al* with *Takahashi* teach the multi-protocol adapter according to claim 1, *Abraham et al* further teach the adapter further comprising: means for defining communication routines between the adapter and a client via a host device, and means for communicating between the adapter and the client after definition of communication routines between the adapter and the client (*col.9 lines 20-42, col.10 lines 54-67, col.12 lines 40-45; Richter et al: col.9 line 32-col.10 line 47*).

d. **Per claim 7**, *Abraham et al* and *Richter et al* with *Takahashi* teach the multi-protocol adapter according to claim 1, *Abraham et al* further teach the adapter further comprising: a TCP/IP connection established between two software elements, the connection of serial multiplex network messages between software entities being generalized without knowledge of a specific type of multiplex network (*Abstract, col.9 line 8-col.10 line 53, col.15 lines 19-67; Richter et al: col.5 lines 15-31*).

e. **Per claim 8**, *Abraham et al* and *Richter et al* with *Takahashi* teach the multi-protocol adapter according to claim 1, *Abraham et al* further teach the adapter further comprising: a server program handling communications between a source entity and a destination entity (*col.10 lines 6-26; Richter et al: col.5 line 58-col.6 line 5, col.21 line 1-col.22 line 60*).

f. **Per claim 9**, *Abraham et al* and *Richter et al* with *Takahashi* teach the multi-protocol adapter according to claim 1, *Abraham et al* further teach the adapter further comprising: at least one of message scheduler, a message responder, a message filter or a script loader (*col.3 lines 50-54*).

Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Abraham et al* (US 5,530,842), *Richter et al* (US 5,905,885), and *Takahashi* (US 5,751,827) in further view of *Cambron* (US 6,539,027).

g. **Per claim 12**, *Abraham et al* and *Richter et al* with *Takahashi* teach the multi-protocol adapter according to claim 1, as applied above, yet fail to explicitly teach the multi-protocol adapter further comprising: an on-board web server. However, *Cambron* teaches that a central controller card includes an on-board web server, which functions as an Internet gateway (*col.7 lines 15-23*). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Abraham et al*, *Richter et al* and *Takahashi* with *Cambron* in order to provision an on-board web server to implement the http protocol for Internet support, in conjunction with the other protocols implemented on the multi-protocol adapter.

h. **Per claim 13**, *Cambron* teaches the multi-protocol adapter according to claim 12 further comprising: communication between users of the adapter and the adapter via a web browser technology (*col.7 lines 15-23*).

i. **Claim 14** is substantially similar to claims 12 and 13 and is therefore rejected under the same basis.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Abraham et al* (US 5,530,842) *Richter et al* (US 5,905,885), and *Takahashi* (US 5,751,827) in further view of *Reul et al* (US 6,526,340).

j. **Per claim 15**, *Abraham et al* and *Richter et al* with *Takahashi* teach the multi-protocol adapter according to claim 1, as applied above, yet fail to explicitly teach wherein the plurality of protocols are selected from the group consisting of controller area network protocols, J1850 protocols, keyword protocol 2000, and UART-based protocols. However, *Reul et al* teach a multi-vehicle communication interface capable of supporting multiple protocols including keyword protocol 2000 and J1850 protocols (*col.3 lines 33-39, col.3 line 53-col.4 line5, col.5 lines 1-62, col.7 line 60-col.8 line 10*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Abraham et al*, *Richter et al*, and *Takahashi* with *Reul et al* for the purpose of extending the abilities of the adapter to function in an automobile controller system having interface protocols compatible with various types of vehicles; because support for the additional protocols would permit use of the adapter in various types of vehicles.

k. **Per claim 16**, *Reul et al* teach the multi-protocol adapter according to claim 1, wherein the daughter board interface modules are selected from the group consisting of SAJ1850, UBP, CCD, SCI, CAN, SAEJ1587, J1939, J2284, J2411, ISO 11992, 9141-2 and

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KWP2000 modules (*col.3 lines 33-39, col.3 line 53-col.4 line 5, col.5 lines 1-62, col.7 line 60-col.8 line 10*).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Abraham et al* (US 5,530,842), *Richter et al* (US 5,905,885), and *Takahashi* (US 5,751,827) in further view of *Liebl et al* (US 6,236,917).

Per claim 5, *Abraham et al*, *Richter et al*, and *Takahashi* jointly disclose the multi-protocol adapter of claim 1 as applied above, yet fail to explicitly teach the multi-protocol adapter according to claim 1, wherein the embedded operating system comprises Linux operating system. However, *Liebl et al* disclose a vehicle diagnostic tool with support for the Linux operating system (*col.3 lines 29-34*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Abraham et al*, *Richter et al*, and *Takahashi* with *Liebl et al* for the purpose of extending the abilities of the system for compatibility with the Linux operating system interface; because the Linux operating system is a freely-distributed open source operating system offering a popular alternative to proprietary operating systems.

(10) Response to Argument

- A. Regarding Claim 1: Appellant argues that the double patenting rejection is improper because claim 1 of the instant application does not claim same invention as set forth in claims 1, 11 and 18 of the 2005/0083965 publication; because claims 1, 11 and 18 of the 2005/0083965 publication “do [does] not require an embedded operating system and require at least one daughter-board interface module mounted in the plurality of daughter-board slots”.

Examiner respectfully disagrees. As indicated in the above double patenting rejection from the previous Office Action, independent claims 1, 11 and 18 of the 2005/0083965 publication claim “a motherboard including an integrated central processing unit (CPU), a plurality of interface modules, a plurality of device drivers and a plurality of daughterboard module slots, said CPU being capable of simultaneously communicating with the one or more computers operating different protocols”; wherein independent claims 1 and 4 of instant application claim “an integrated CPU including an embedded operating system, said operating system including software modules and device drivers for one or more of interrogating, monitoring, retrieving data, downloading data, recording data, revising data and performing diagnostics over any one of the plurality of protocols, wherein the operating system is capable of simultaneously communicating with the one or more computers running different protocols”.

The similarities in the claim language is clearly evident as well as the identical features mentioned in both applications. However, Appellant argues that the “embedded operating system” mentioned in the instant application is the distinguishing factor that renders the inventions distinct. This argument is erroneous because it is well-known in the art that an operating system is just the installed foundation software that controls the usage of hardware resources on a device (*Microsoft Computing Dictionary*), thus “an embedded operating system, said operating system including software interface modules...” is redundant in nature. The independent claims of the 2005/0083965 publication perform the same functions and claim the equivalent functional elements (“software interface modules” vs. “interface modules”, “device drivers” with intended use vs. “device drivers”, and “daughter board interface slots for accepting at least one daughter board interface modules” vs. “at least one daughter-board interface module

mounted in one of the plurality of daughter-board slots”) included in the embedded operating system of the instant application. Thus, a protocol adapter that would infringe on the multi-protocol adapter of the instant application would also infringe on the protocol adapter of the 2005/0083965 publication. Applicant’s arguments are therefore unpersuasive.

- B. Regarding Claim 4: Appellant argues that the double patenting rejection is improper because claim 1 of the instant application does not claim same invention as set forth in claims 8, 16 and 19 of the 2005/0083965 publication; because claims 8, 16 and 19 of the 2005/0083965 publication “require level shifting buffers and an ATA interface for providing an attachment point for mass storage devices and a programmable logic block”.

Examiner respectfully disagrees. As indicated in the above double patenting rejection from the previous Office Action, independent claims 8, 16 and 19 of the 2005/0083965 publication claim details list of “components selected from a group consisting of...”. While claim 4 of the instant application details a general list of components, the 2005/0083965 publication specifically names the type of components and interfaces mentioned in the instant application. The level shifting buffers are but references to a differential voltage power supply which is common to motherboards, while the ATA interface for providing an attachment point for mass storage devices equates to the “interface for connection of mass-storage devices” mentioned in claim 4 of the instant application. Thus, a protocol adapter that would infringe on the protocol adapter of the instant the 2005/0083965 publication would also infringe on the multi-protocol adapter of the instant application. Appellant’s arguments are therefore unpersuasive.

- C. Regarding Claims 1, 4 and 6-9: Appellant argues that *Abraham et al*, *Richter et al* and *Takahashi* fail to teach, suggest, or motivate “a CPU having simultaneous interaction between at least one multiple device using multiple protocols” because the concentrator of *Abraham et al* “does not interrogate, monitor, record, revise or perform diagnostics over any one of a plurality of protocols”.

Examiner respectfully disagrees. *Abraham et al* clearly teach a multiple channel concentrator which interfaces with three network channels concurrently (*Figure 2, col.3 lines 10-30, col.9 line 61-col.10 line 2*); wherein each network uses a different protocol (*col.9 lines 22-27*), each channel is used to provide a single protocol, and the assignment of the protocol to one of the channels may be changed arbitrarily at any time (*col.10 lines 49-53*). Furthermore, *Abraham et al*’s concentrator comprises media modules along with switching, management, configuring and receiving means (*col.31 line 43-col.33 line 7*) which clearly fulfills the claim language function for performing “one or more of interrogating, monitoring, retrieving data, downloading data, recording data, revising data and performing diagnostics over any one of the plurality of protocols...”. In the art, interrogation entails giving or sending out a signal for triggering an appropriate response; so management means for switching, monitoring, controlling, configuring and reconfiguring connections to physical communication paths simultaneously duly provide interrogation (*col.31 line 60-col.32 line 35*), monitoring (*col.32 lines 35-53*) as well as revision functions (*col.31 line 64-col.32 line 5, col.33 lines 21-36—re-configuration*). Appellant’s arguments are therefore unpersuasive.

- D. Regarding Claims 12-14: Appellant argues that *Cambron* fails to teach, suggest, or motivate that “the user of the multiplexer to communicate with the multiplexer or adapter via web browser technology”.

Examiner respectfully disagrees. *Cambron* clearly teaches a central controller card which includes a web server for providing Internet web-browser functionality to the multiplexer system connected to card (*col.3 lines 20-28, col.6 lines 59-62, col.7 lines 21-26*), wherein the circuit/line cards are equivalent to circuit-boards. *Cambron's* central controller card when combined with the teachings of *Abraham et al*, *Richter et al* and *Takahashi* makes obvious the modification of an adapter and/or daughter-board to include a web server for providing Internet accessibility. Furthermore, the contribution of each of the prior art's teaching to the combination suggests to one of ordinary skill in the art, that a piezoelectric speaker (taught by *Takahashi: col.2 lines 45-51, col.6 lines 28-33*); peripheral, various interfaces, sockets and expansion ports (taught by *Richter: Abstract, col.3 line 18-col.5 line 58*); and an on-board web sever (taught be *Cambron: col.6 lines 59-62, col.7 lines 21-26*) are well-known components commonly integrated onto circuit-boards. Appellant's arguments are therefore unpersuasive.

- E. Regarding Claim 5: Appellant argues that cited prior art, *Liebl et al*, fails to teach, suggest, or motivate that "the embedded operating system comprises Linux operating system".

Examiner respectfully disagrees. As discussed above, an operating system is just the installed foundation software that controls the allocation and usage of hardware resources on which applications depend (*Microsoft Computing Dictionary*). Thus it is obvious to one of ordinary skill in the art for a system, with the functional elements and necessary memory to sustain a central processing unit, to have essentially any type of operating system software installed on it. Therefore *Liebl et al's* teaching for installing such operating systems as Lynx or

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Windows CE into they system module of a device (*col.1 lines 36-48, col.2 lines 39-65, col.4 lines 9-48*), is just an example of how a particular operating system can be incorporated into the system modules of a device for controlling the device according to the characteristics of the particular operating system. Appellant's arguments are therefore unpersuasive.

For the above reasons, it is believed that the rejections should be sustained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Respectfully submitted,

/Kristie D. Shingles/
Examiner, Art Unit 2141

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2144

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/William C. Vaughn, Jr./

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